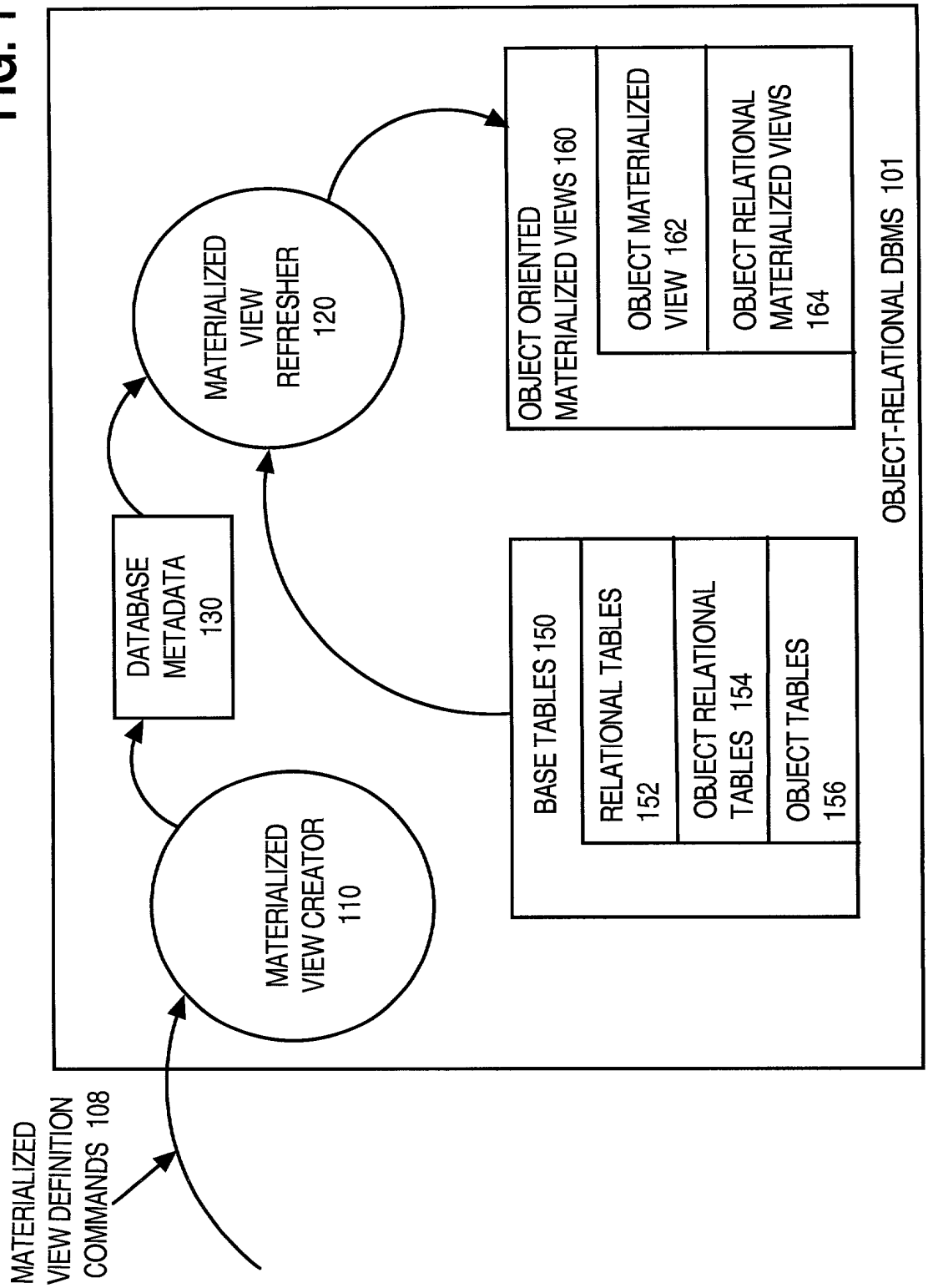
FIG. 1


MATERIALIZED VIEW DEFINITION COMMANDS 108
MATERIALIZED VIEW CREATOR 110
DATABASE METADATA 130
MATERIALIZED VIEW REFRESHER 120
BASE TABLES 150
RELATIONAL TABLES 152
OBJECT RELATIONAL TABLES 154
OBJECT TABLES 156
OBJECT ORIENTED MATERIALIZED VIEWS 160
OBJECT MATERIALIZED VIEW 162
OBJECT RELATIONAL MATERIALIZED VIEWS 164
OBJECT-RELATIONAL DBMS 101

PERSONS

FIRST_NAME_P	LAST_NAME_P	ADDRESS_P

FIG. 2

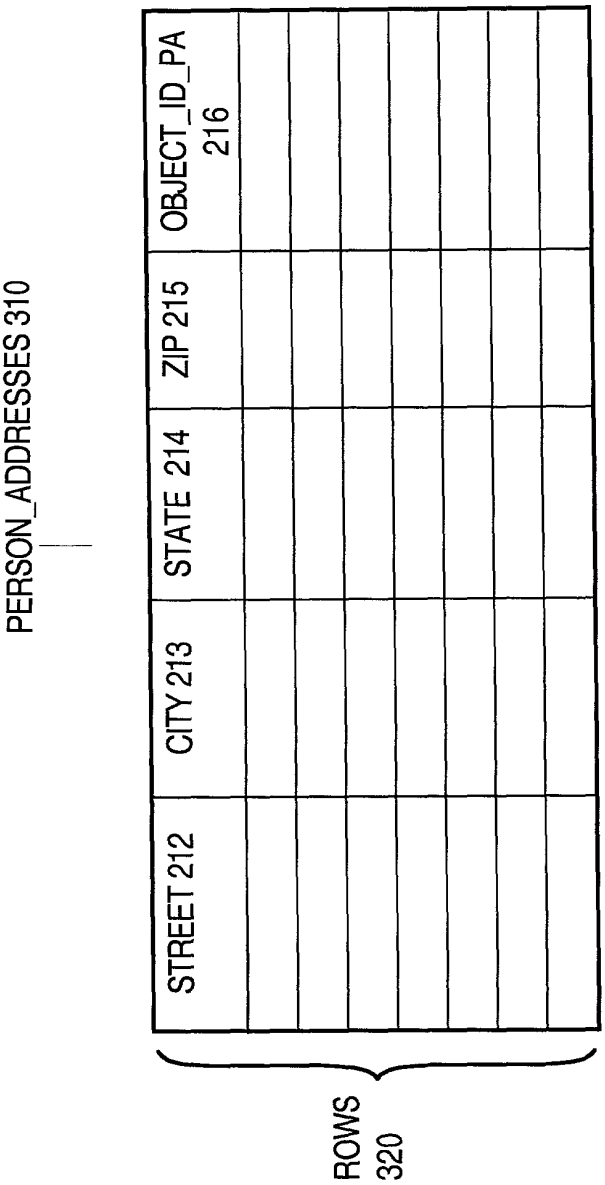

PERSON_ADDRESSES 310
STREET 212
CITY 213
STATE 214
ZIP 215
OBJECT_ID_PA 216
ROWS 320

FIG. 3

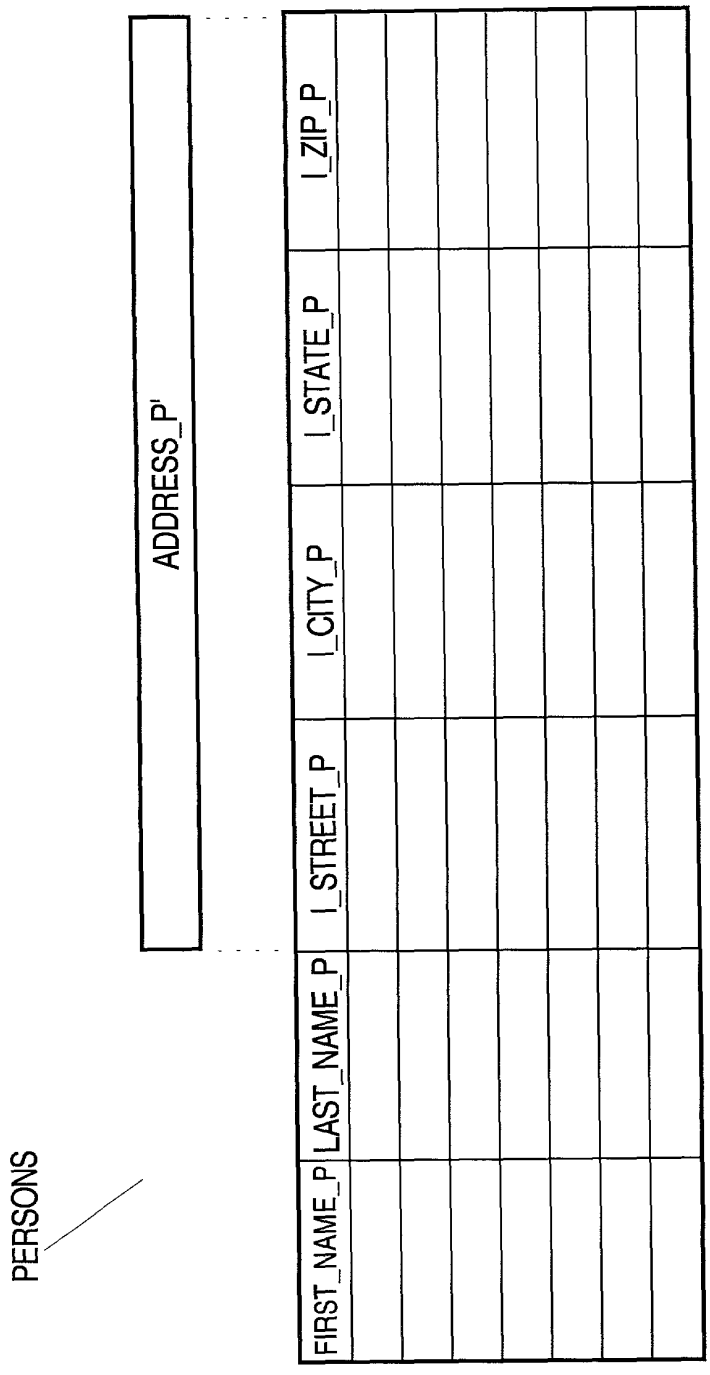

PERSONS
FIRST_NAME_P
LAST_NAME_P
I_STREET_P
I_CITY_P
I_STATE_P
I_ZIP_P
ADDRESS_P'

FIG. 4

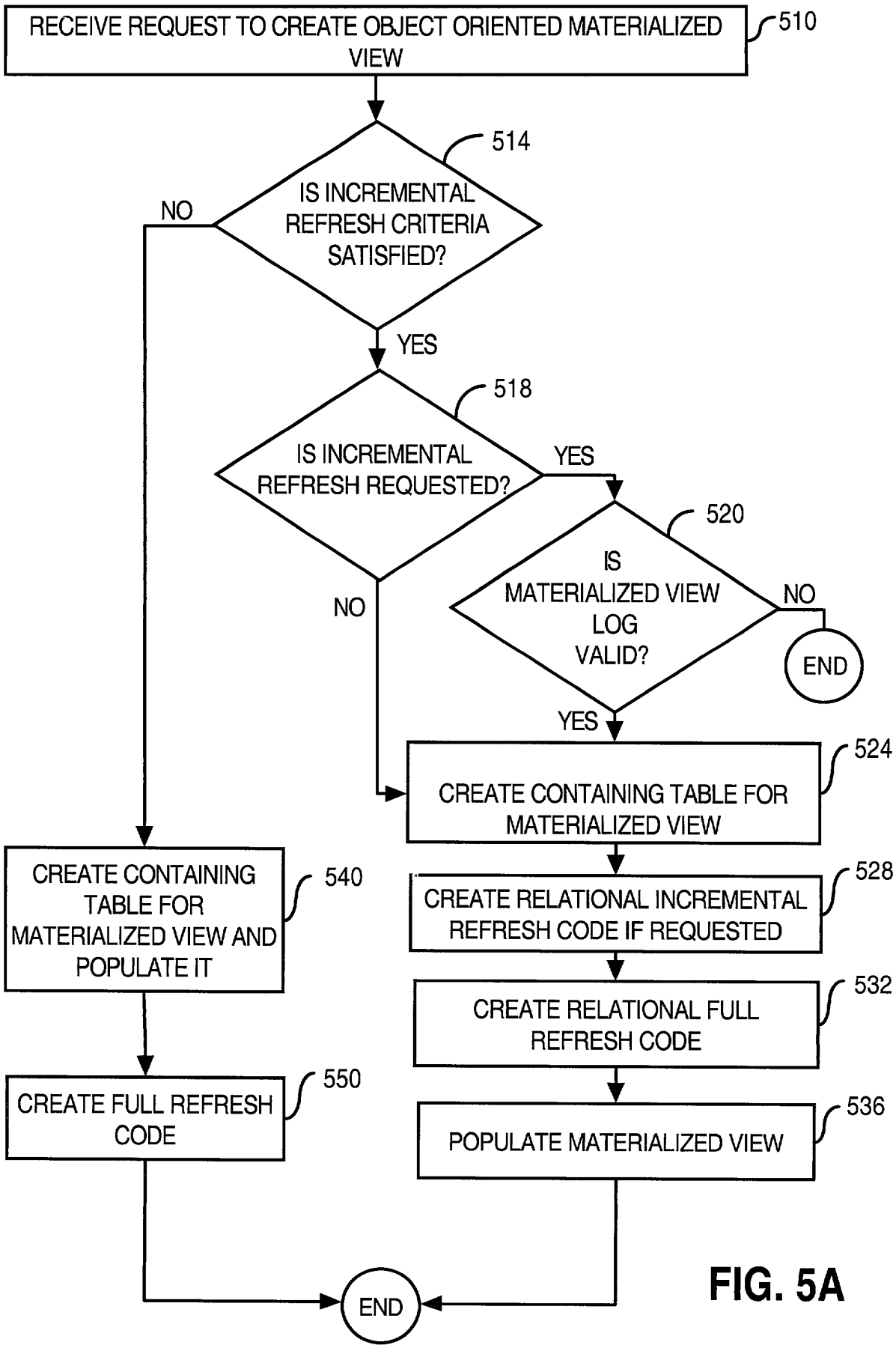

RECEIVE REQUEST TO CREATE OBJECT ORIENTED MATERIALIZED VIEW
510
514
IS INCREMENTAL REFRESH CRITERIA SATISFIED?
NO
YES
518
IS INCREMENTAL REFRESH REQUESTED?
YES
NO
520
IS MATERIALIZED VIEW LOG VALID?
NO
END
YES
524
CREATE CONTAINING TABLE FOR MATERIALIZED VIEW
528
CREATE RELATIONAL INCREMENTAL REFRESH CODE IF REQUESTED
532
CREATE RELATIONAL FULL REFRESH CODE
536
POPULATE MATERIALIZED VIEW
CREATE CONTAINING TABLE FOR MATERIALIZED VIEW AND POPULATE IT
540
CREATE FULL REFRESH CODE
550
END

FIG. 5A

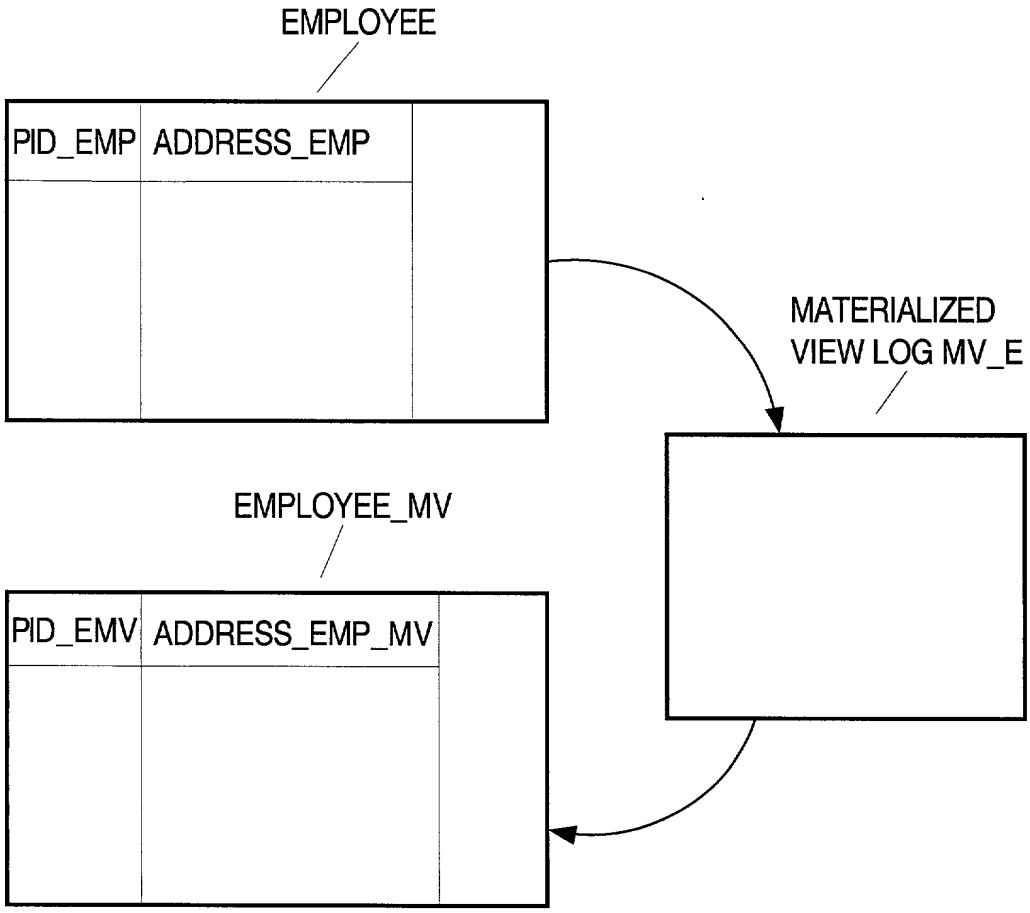

EMPLOYEE
PID_EMP
ADDRESS_EMP
MATERIALIZED
VIEW LOG MV_E
EMPLOYEE_MV
PID_EMV
ADDRESS_EMP_MV

FIG. 5B

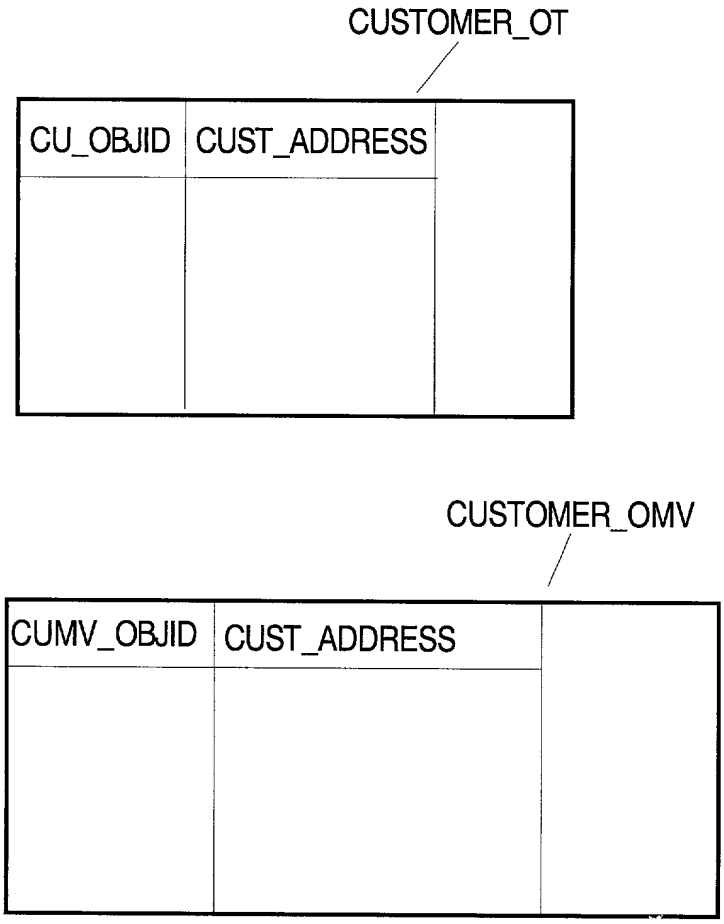

CUSTOMER_OT
CU_OBJID
CUST_ADDRESS
CUSTOMER_OMV
CUMV_OBJID
CUST_ADDRESS

FIG. 5C

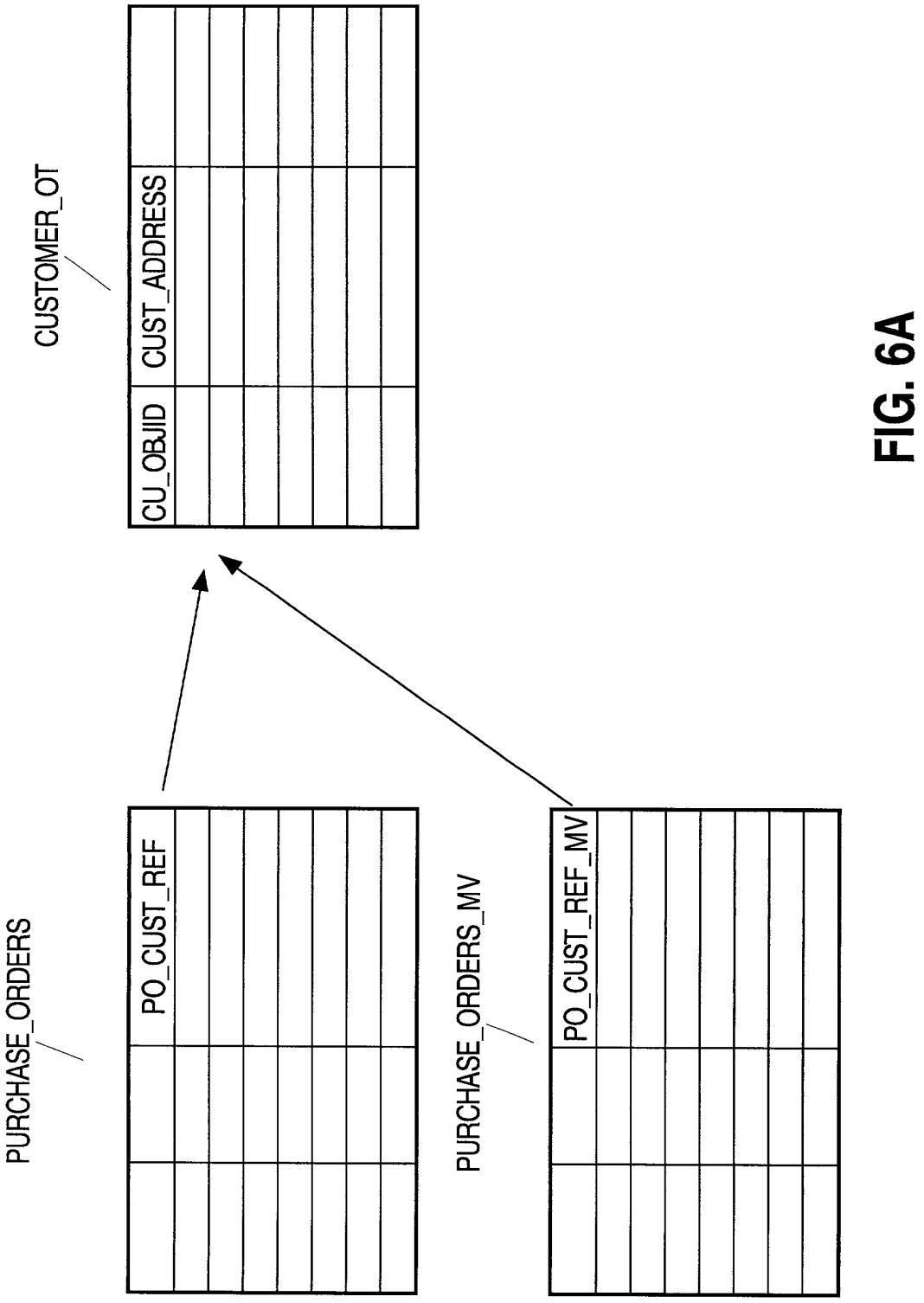

CUSTOMER_OT
CU_OBJID
CUST_ADDRESS
PURCHASE_ORDERS
PO_CUST_REF
PURCHASE_ORDERS_MV
PO_CUST_REF_MV

FIG. 6A

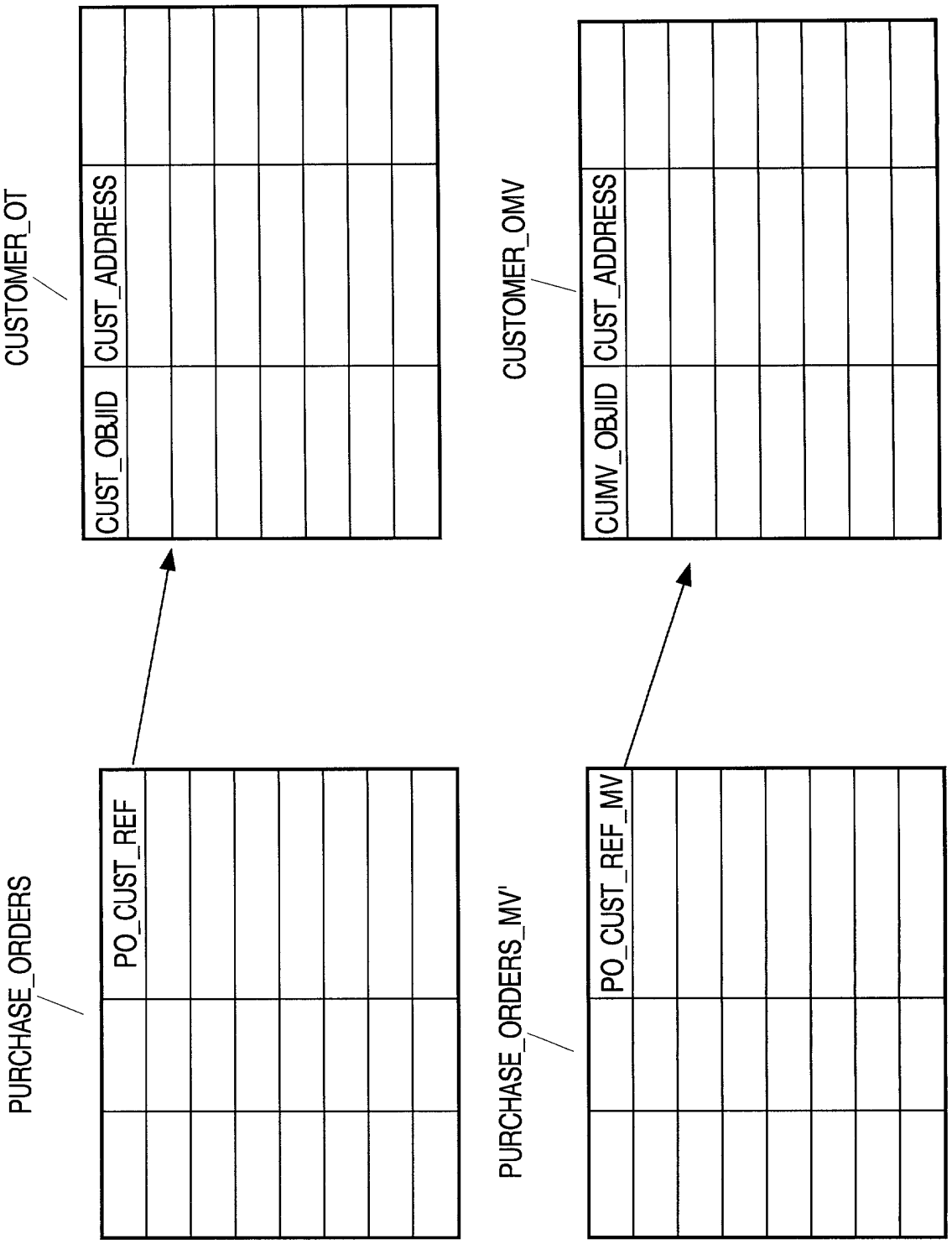
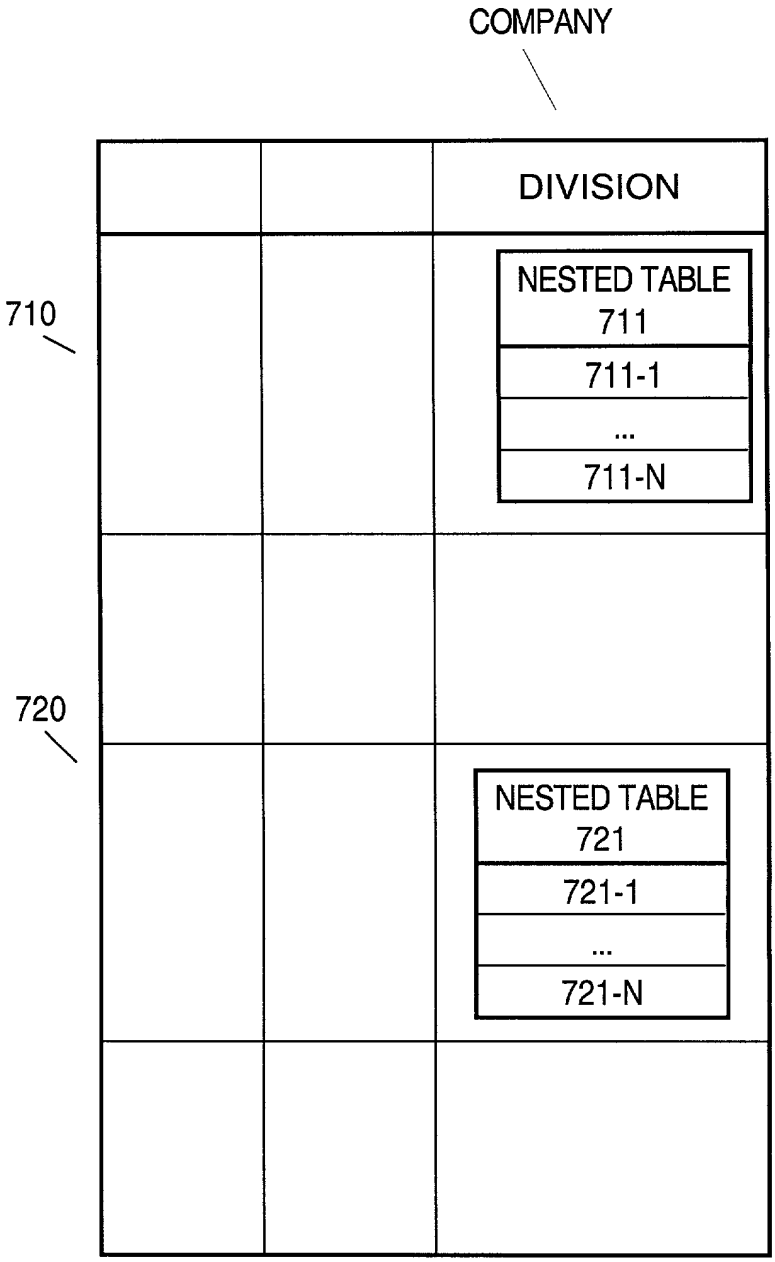

CUSTOMER_OT
CUST_OBJID
CUST_ADDRESS
CUSTOMER_OMV
CUMV_OBJID
CUST_ADDRESS
PURCHASE_ORDERS
PO_CUST_REF
PURCHASE_ORDERS_MV'
PO_CUST_REF_MV

FIG. 6B

FIG. 7A


COMPANY
DIVISION
NESTED TABLE 711
711-1
...
711-N
710
720
NESTED TABLE 721
721-1
...
721-N

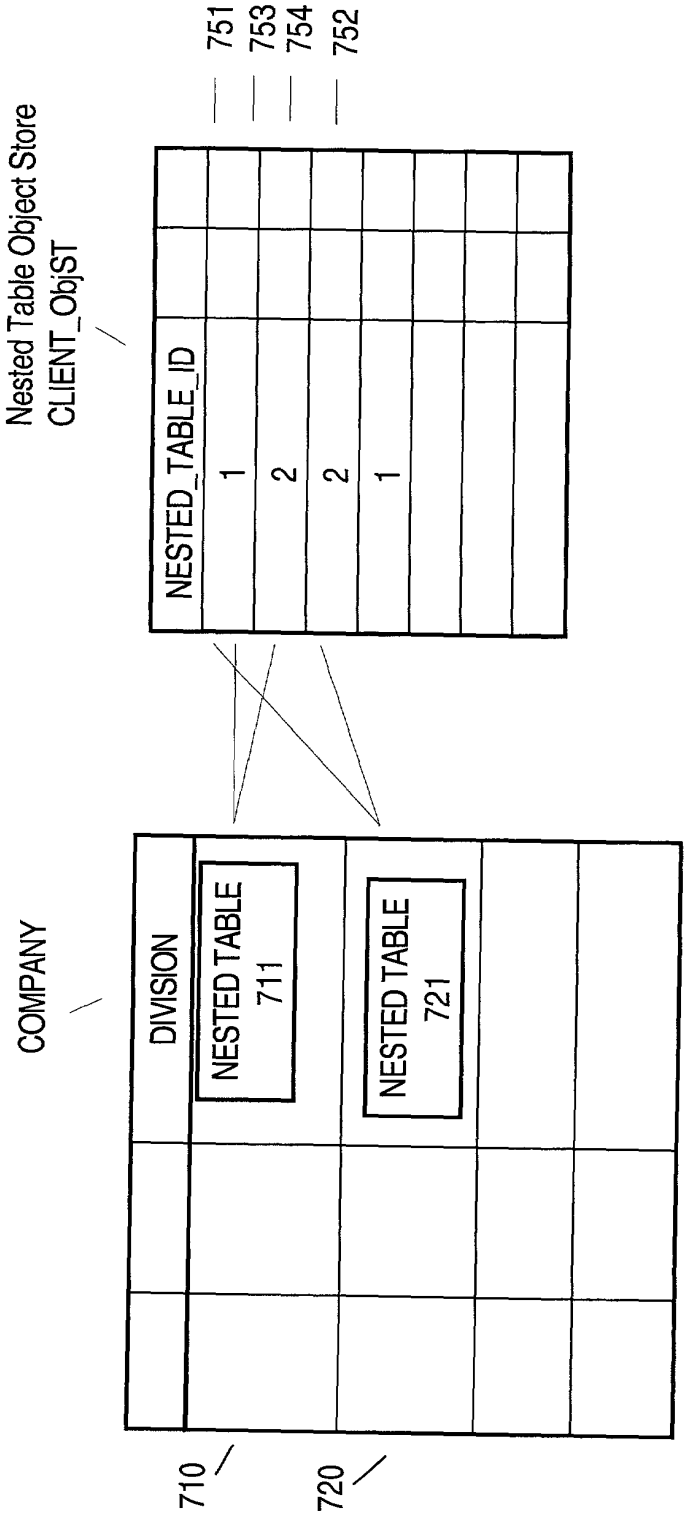
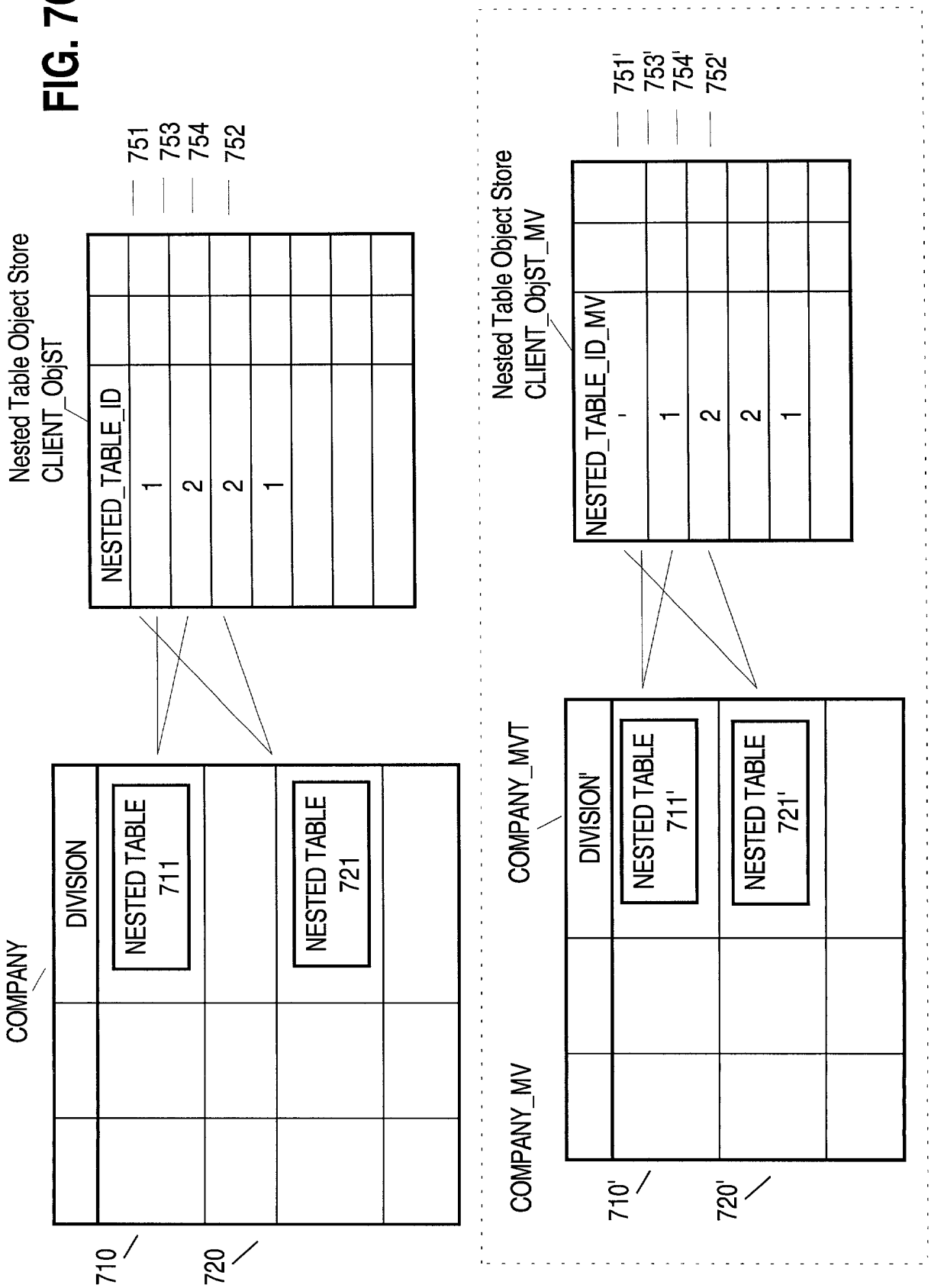

751
753
754
752
Nested Table Object Store
CLIENT_ObjST
NESTED_TABLE_ID
1
2
2
1
COMPANY
DIVISION
NESTED TABLE
711
NESTED TABLE
721
710
720

FIG. 7B

FIG. 7C


COMPANY
DIVISION
NESTED TABLE 711
NESTED TABLE 721
710
720
Nested Table Object Store CLIENT_ObjST
NESTED_TABLE_ID
751
753
754
752
COMPANY_MV
COMPANY_MVT
DIVISION'
NESTED TABLE 711'
NESTED TABLE 721'
710'
720'
Nested Table Object Store CLIENT_ObjST_MV
NESTED_TABLE_ID_MV
751'
753'
754'
752'

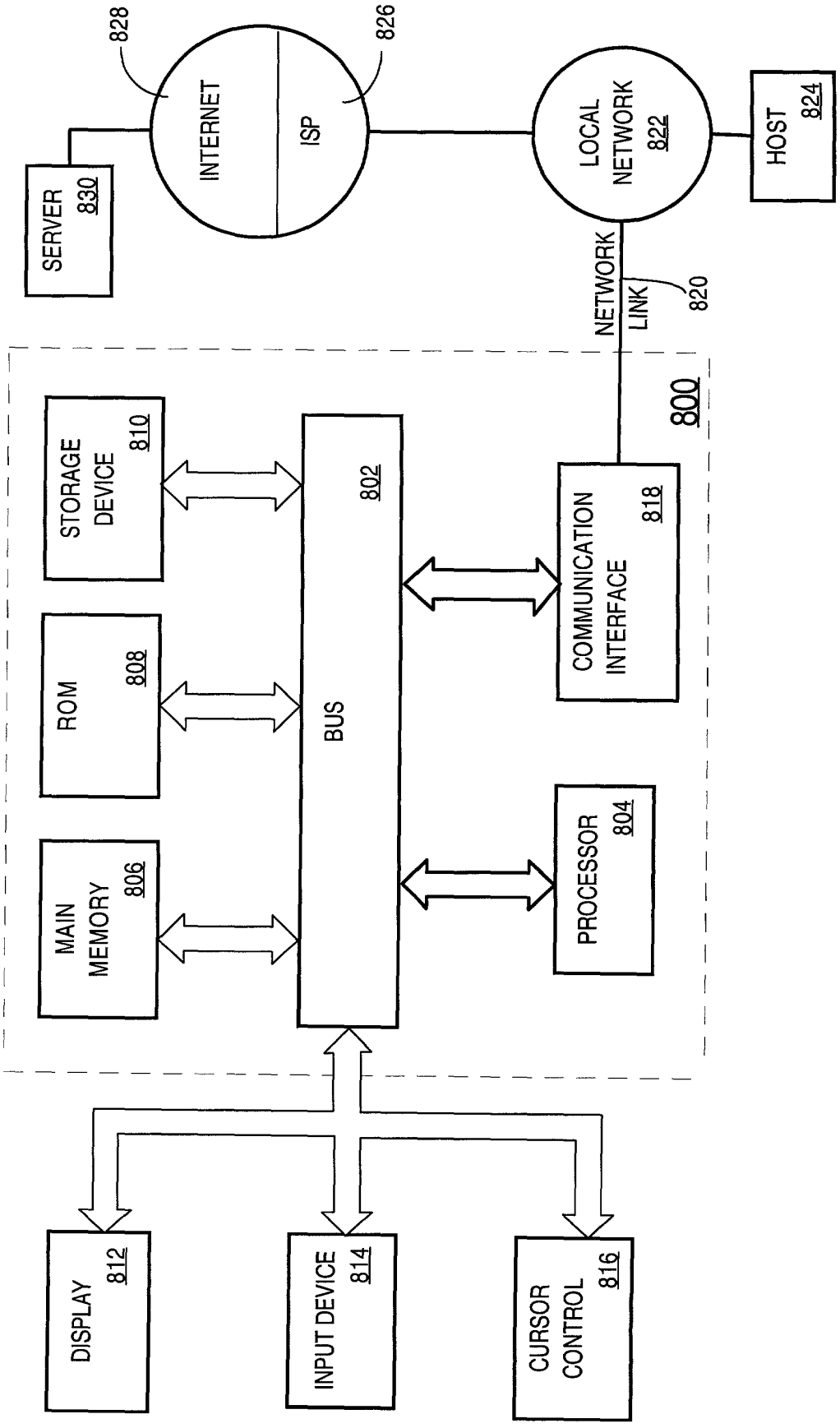

828
826
INTERNET
ISP
SERVER
830
LOCAL
NETWORK
822
HOST
824
NETWORK
LINK
820
800
STORAGE
DEVICE
810
802
BUS
COMMUNICATION
INTERFACE
818
ROM
808
MAIN
MEMORY
806
PROCESSOR
804
DISPLAY
812
INPUT DEVICE
814
CURSOR
CONTROL
816

FIG. 8